University News

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Dr. Manmohan Singh, Deputy Chairman, Planning Commission, delivering the convocation address at the Narendra Deva University of Agriculture & Technology, Faizabad.

S.P. AGHARKAR PROFESSORSHIP

AT THE

Maharashtra Association for the Cultivation of Science (MACS)

PUNE (MAHARASHTRA)

The Maharashtra Association for the Cultivation of Science. PUNE-411 004 has instituted a Professorial Chair to commemorate the memory of the Late Prof S.P Agharkar, who was one of the most distinguished Professor of Botany in India and one who lived and died for the promotion of science in India. He was also the Founder Director of the Maharashtra Association for the Cultivation of Science.

The objective in establishing the Professor S.P. Agharkar Chair is to provide an opportunity to eminent scientists to take time off from his routine duties to pursue high quality research in any branch of Biological Sciences or to help in the initiation of new and emerging areas of research in biological science which could eventually become one of the areas of thrust of MACS or to write treatise. critical monographs on topics of interest to MACS and thereby promote the cause of science which was dear to Professor Agharkar The Agharkar Professor could also give courses and guide young research students The scope of the Agharkar Professorship has purposely been kept broad and wide Similarly the tenure of the Professorship could also vary from one year to five years. The Vice-Chancellors of the universities and Heads of National Laboratories and Research Institutes are requested to nominate suitable scientist s for the S P. Agharkar Professorship

A token honorarium of Rs 4.000'- (fixed) p m. will be admissible to the person nominated as Agharkar Professor during the tenure of his nomination which could be initially upto three years. The tenure could be extended for a further period of two years depending upon the progress and the nature of work carried out MACS will provide all the basic laboratory facilities and the necessary contingent expenditure MACS will also try to provide family residential accommodation to the Agharkar Professor for the duration of his tenure The person nominated should be above 40 years of age.

There is no prescribed form for nominating the names of suitable candidates. The nomination for the Agharkar Chair should accompany the Bio-data of the nominee alongwith his list of publications, critique on the scientific work done by him and a brief description of the proposed work. This should be sent alongwith the recommendations to the Director, Maharashtra Association for the Cultivation of Science, Law College Road, Pune-411 004 so as to reach him before **31st August, 1987.**

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IN THIS ISSUE

Editor:
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Educational Needs for Integrated Rural Development

Technologists with Managerial Skills

N.G.P. Rao*

Introduction

Despite significant growth in agricultural production, the share of the rural sector in the gross national product (GNP) has declined from 58.9% in 1950-51 to 41.6% in 1978-79. This indicates that the allied sectors of rural economy have not received due attention. The objectives of rural development extend beyond any one particular sector.

The technology policy statement of the Government of India (1983) asserts that the technology must be viewed in the broadest sense covering agriculture alongwith manufacturing sector ranging from village, small scale and cottage industries to medium, heavy and sophisticated industries. There are inherent problems about the nature of science and technology, its relationship with society and the managerial innovations required to direct and utilize science and technology effort for rural development and they need to be understood in depth.

Rural areas have land, livestock, labour and some capital. If properly mobilised, they could reduce poverty and improve quality of life This implies fuller development of existing resources, the introduction of new production technology at the grass-root level and creation of new types of institutions and organizations A national programme of rural development, therefore, includes a mix-up of activities, raising agricultural output; generation of agro-industries; creation of new employment opportunities; improvement of health of cattle and human beings; education; expansion of communications and improvement of rural housing, roads and sanitation.

A missing link in the integrated rural development programmes has certainly been an integrated personality who is reasonably well equipped with the technical know-how and the managerial skills. The present village level worker nor the Block Development Officer could be expected to meet such challenges Presently, available institutions in the country are subject oriented or management oriented and there is a need to design a specific course leading towards development of integrated personalities to meet the future challenges wherein the technological and management ingredients are bound to be of a different order. Such an individual could analyse the emerging alternatives and explore utilising science and technology for rural societies into the overall framework of the developmental strategies.

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Objectives

The divergent interests of country and the town, industry and agriculture have been perennial issues. Pandit Jawaharlal Nehru wrote "There is no question of palaces for millions of people But there seems to be no reason why millions should not have comfortable and up-to-date homes, where they can lead a cultured existence. Many of the present over-grown cities have developed evils which are deplorable. Probably, we have to discourage this over-growth and at the same time encourage the village to approximate more to the culture of the town "

What should then be the future village of our dreams ? Should a conceptual village emerge out of repair and reconstruction of existing villages ? Should it be dissipated into the farms ? Should we construct altogether new modern villages with no caste and creed barriers ? Should it be a combination of the various alternatives ? What are the resources ? How best could they be exploited ?

In crop improvement programmes, the perennial evolutionary approaches yielded only marginal benefits Recent revolutionary approaches involving changes in the form and function of plants had brought about quantum increases in a relatively short period. Construction has been easier than reconstruction

There is need for professionals, who could analyse available and emerging alternatives and act. They should be equipped with competence in various technological components of the Integrated Rural Development programmes coupled with managerial and analytical abilities.

A fouryear degree course (B. Tech.) in Rural Technology could meet these needs.

Course Structure

The course structure may have four segments ·

1. Classroom lectures and practicals
2. Village level surveys and studies
3. Working with public and voluntary organisations involved in rural development
4. Internship during which a project report will be written

The following areas of study could be covered :

1. **Rural Communities** · The development of the Indian Village system-rural communities, social change and the rural community, population characters and change, population control, role of rural women, rural sociology—land reform, land tenure, consolidation of holdings—rural institutions, rural education and culture and the process of urbanisation.

2. **Rural Resources** : The eco-system—physical variables like climate and soils, land resources and their conservation and development; biological variables including agriculture and animal husbandry; socio-cultural variables such as human resources, resource inventory, resource analysis and resource utilization.

3 **Rural Design and Architecture** : Conceptual Villages—rural housing, farm structures, community centres, schools, market places, recreation and cultural centres; sanitation, water supply; roads and communication; and other community amenities—rural environment, land scaping and environmental protection.

4. **Agriculture, Horticulture and Social Forestry :** Agricultural resources, climate, soil, water, crop production, improved varieties, fertilizer use, irrigation and water management, plant protection, input use, cultural practices, cropping systems, and related technology; fruits. vegetables and ornamental plants; social forestry, farm management; and production economics.

5. **Animal Production :** Livestock production and management, cattle, buffaloes, goats, sheep, etc., dairy and dairy products; poultry, fisheries; feeds and fodder; and animal disease and health care

6. **Rural Engineering** : Agricultural tools, implements and machinery, use and maintenance, energy, bio-energy, solar energy, wind, electricity, agricultural wastes and waste utilization.

7. **Agro-Industries** Agricultural by-products and their utilization, post-harvest technology, foods, fruits and vegetables, processing and preservation; Agro-industries based on available commodities; sericulture, apiculture; various cottage and small scale industries to meet rural needs and for employment generation

8. **Rural Health and Nutrition** · Nutrition; child development, family planning, home management, health care

9. **Rural Economics**· Farm management, agricultural cooperation, processing and marketing, agricultural credit, banking and financial institutions input and other services, employment, distribution of rural wealth in equality, etc

10. **Agricultural Business Management** . Quantitative techniques, management science and its applications, managerial economics, market management, production management, financial management, management of cooperatives, quantitative methods for decision making, special programmes in agricultural business management

11. **Rural Development Management** : Rural environment, farmers organizations; alternative strategies of rural development; management, integrative rural

(*Contd. on page 9*)

Wanted : A New Strategy for Financing Higher Education-I

K.K. Balachander*

The Background

Ever since 1950, higher education has become the fastest growing part of the education system in India. The policy-makers then believed, or were led to believe, that only through faster expansion of higher education, they can build middle and higher level manpower for economic modernisation The experience of advanced countries was often cited to support the (higher) education-economic growth causality. The idea of 'catching up' with advanced countries exerted a greater influence on the thinking of the leadership. Pandit Nehru had once remarked that India must "learn to run before she learned to walk". No wonder that countries like India were then described as 'century-skippers' as far as their economic aspirations were concerned ! They sought to achieve greater results in a much shorter time than was taken by the advanced nations in their earlier stages of development

As Raymond Lyons put it, the mutual comprehension between politicians, professional economists and educators based on a measure of understanding of common needs and interests reached its apthesis in the 1950s and 1960s when in economic growth terms, as the poet might have said "all was wonder and a wild delight." With favourable prospects for economic growth, it seemed likely that the need for skilled workers, experts and educated people would increase almost geometrically In its eagerness to avoid shortages of trained manpower in the course of industrialisation, and to overcome centuries of neglect of human resources during the colonial rule, the Government of India launched on a 'crash' programme to expand the educational system, particularly the higher education sector. The policy-makers thought in terms of 'leaps' rather than 'steps' in building a modern higher educational system in the country. Besides, the transformation of the elite' higher educational system, which the country had inherited from the British Government, into that of a broader one befitting a democratic nation was a pre-Independence promise made by India's many political leaders. This meant that the Government had to gear the expansion of higher education not only to meet the demand for highly qualified manpower necessary for the newly initiated programme of economic development, but also the social demand arising from rising expectations of the young people. Considering the vastness of the country, the age-group population to be covered, the scarce resources and the comparative costliness of higher education, the task appeared to be a Herculean one, but that did not deter the Government of India from making an effort. It was naturally forced to funnel more and more funds into the higher education sector. Substantial progress has been made since 1950 in increasing the enrolment in higher education—the rate of growth in enrolment has been much faster than the rate of growth of the economy. By 1980-81, nearly 80 per cent of the expenditure on higher education was met with Government assistance. Higher education had come to account for about one-third of the expenditure on education (as a whole) in majority of the States.

Looking at the organisational structure of the higher education system, the country has built, over the years, one of the largest systems in the world, and is maintaining over 130 universities, 15 institutions—deemed-to-be universities, about 5500 colleges with an intake of nearly 35 lakh students. The rate of growth of enrolment has been as high as 10 per cent per annum during the period 1950-51 to 1975-76. In the sixties, it was 12.5 per cent. Enrolment is likely to rise at the rate of 6-7 per cent per year in the years ahead.

It has to be noted that higher education expanded at a rapid pace over the years long before elementary education became universal. As late J P Naik put it **(The Education Commission and After,** 1982): "The post-Independence period may be described literally as the "era of higher education" in Indian educational history...The University Education Commission was the first to be appointed by the Government of Free India; and throughout the past

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thirty years higher education has received the highest priority, the best attention and proportionately large allocation of funds. It is also the one sector of education which has expanded most." The experiences of Indian States in this respect are not too different, though there are some deviations from the general patterns and trends. Whether such a fast expansion is in accordance with the norms of the economy and whether it is consistent with the development in other sectors of the economy (and lower levels of education), is altogether a different question. But one consequence of such a development has unmistakably been in respect of higher educational finances and the behaviour of individual sources of finance. Some of these aspects are examined in the sections that follow, some policy decisions that are urgently needed in respect of financing higher education are suggested.

II
Sources of Finance

The present system of financing higher education in India can be described as a 'multi-source' system, or a 'mixed system'. The different sources that contribute to higher educational expenditure are: (a) Government funds—Central and State Governments, (b) Fees that the students pay, (c) University and Local Body funds, and (d) funds from other private sources such as Endowments, Donations, Gifts, etc. This kind of a multi-source-system or plurality of sources of financing, was introduced in India during the British period as it was thought it had several advantages:

(i) In a situation of steady expansion of higher education, Government funds alone may be found to be inadequate. Under a multi-source financing system, the total volume of assistance will be increased. (When the grant-in-aid system was introduced in India during the British period, it was stated that public funds should be utilised in such a way as would encourage the establishment/maintenance of more and more institutions by private agencies, philanthropic bodies and individual users (through fees). The Wood's Despatch (1854) believed that a far more rapid spread and progress of education would result by thus drawing support from non-governmental sources than would follow by a mere increase of expenditure by the Government.

(ii) Since the students (or their parents/guardians) will share the expenditure by way of fees, this will minimize tax-payer resistance, especially from non-users of higher education, for providing funds to higher education.

(iii) Under this system, apart from contributions made by the Government and the individual users, there is scope for contributions to flow from other private sources as well in the form of donations, endowments, gifts, scholarships, etc. from voluntary bodies, trusts, large companies/corporations, private philanthrophic individuals and so on. Dependence on income from a single source, it was felt, might affect the inducement to private organisations/individuals, etc. to come forward with funds.

(iv) The institutions will not be subjected to increasing Government scrutiny of costs and programmes—too much of Government involvement as in a totally Government-financed system—in monitoring of costs as may threaten diversity and flexibility resulting in a monotonous uniformity in programmes. According to John Stuart Mill, an educational system wholly controlled by the State would be a "mere contrivance for moulding people to be exactly like one another" and would "establish a despotism over the mind leading by natural tendency to one over the body.....The Government must claim no monopoly for its education, either in the lower or the higher branches, must exert neither authority nor influence....."

(v) Under this system, there is less likelihood of the students taking a complacent attitude and extending their years of study. The fact that students are willingly sharing some part of the expenditure on their higher education will surely create some seriousness among them with regard to their studies and make an invaluable contribution towards raising the standards.

III
The Financial Crisis

Government assistance undoubtedly has played an important role in the development of higher education. But the enthusiasm for faster expansion has

brought in its wake some serious problems and challenges, and these are now coming in the way of the very progress of higher education. Over the years an increasing dependence on the Government for financing higher education has emerged. Government contribution formed the principal source of income, and in some States, it has become the single most important source. The extent of subsidisation showed a continuous rising trend in all the constituents of higher education which, in turn, must have further raised the demand for higher education. The mobilisation of non-governmental private resources got considerably slackened over the years, especially since the beginning of the sixties. The process of expansion, thus, was accompanied by a widening gap between public and private funding of higher education. There has been no alignment between the expenditure on higher education and the fees paid by students, particularly in Professional/Technical categories of higher education.

A financial crisis loomed large, since late seventies, as a result of the Government finding it increasingly difficult to meet the growing demands of the system, and the contributions from non-governmental private sources fast drying up. The country has now to face the dilemma of satisfying the growing aspirations of its youth for higher education, on the one hand, and its inability to meet it with its meagre resources, on the other.

Though Government funds for higher education increased faster than for school education since Independence, because of the rapid rise in enrolment and multiplicity of institutions, such funds have however got thinned out over a larger number and wider area. The establishment of each university or college has been a step in the direction of starving the existing one. Also adequate relief is not provided to neutralise the impact of inflation. The expenditure on higher education has not been in tune with the requirement of rising enrolment during the post-Independence period, thus resulting in inadequacy of finances considered from the per student realisation point of view. In short, enrolment is guided by different sets of considerations which do not necessarily govern the flow of funds. The two seem to grow independent of each other. The 'open door' policy, combined with almost free higher education, has led to a financial crisis. The effect of the process of the decline in the value of the resources became painfully clear as expansion continued to meet popular demand. The dilution of resources in per student terms, which has taken place owing to rapid rise in numbers and prices, could not have but caused definite erosion in academic standards In the process, several gaps have appeared in physical facilities (what is found in countries like India, as an expert remarked, is an antideluvian technology which would not have survived for an instant in any other economic sector). The per student grant for libraries, labs and sports has stayed almost stationary during the last one decade despite galloping costs

Any measure to expand higher education opportunities without prior examination of its cost consequencies (and impact on quality, would prove to be self-defeating. A sound financial base is the *sine qua non* for building a modern higher education system. It appears the Government had not examined sufficiently in advance the hard reality of the implications of the rapid expansion of higher education. The cost of higher education is bound to rise steadily, what with the demand for better pay-scales for teachers, and the higher prices that the institutions have to pay for every other service and facility. The gap between the expected requirements and the possible budgetary allocation of resources from public funds will be substantial in the years to come, and if the same pattern of financing continued, higher educational administrators will have to do some tight rope walking in matching requirements with the available funds.

There is more to higher education than just opening of a dozen new colleges or the starting of a few universities, as the Document **Challenge of Education** (1985) had rightly put it. *It* further states: "Neither quantitative nor qualitative improvement can be effected without provision of resources. In fact the resource implications of qualitative changes in education would be far greater than that of mere quantitative expansion because in such an initiative additional per unit requirements for quality upgradation will be needed for new as well as existing institutions." (p. 62).

In the process of rapid expansion, a system almost dependent on the Government has been created which, in turn, has sapped private contributions. Was that the role envisaged for private and public agencies while a mixed financing system was formulated and introduced in the country for the development of higher education ? This system was adopted originally with the idea that both Government and private contributors would play a complimentary role.

The New Priorities

The possibility of the Government coming to the aid of the higher education sector in a big way at the cost of other pressing governmental activities and also the development of lower levels of education, particularly the elementary level, seems most unlikely in the years ahead. There appears to exist a feeling among policy-makers that higher education has already got more than its fair share They are now veering round to the view that illiteracy is the real stumbling block to economic growth, and hence priority should be given to universal elementary schooling and adult education In fact, the most glaring failure of our educational system is evidenced in the poor literacy rates. Although the proportion of illiterates is falling, in absolute terms their numbers are increasing We have now more illiterates in India, than the total population at the time of Independence! According to the World Bank estimates, India would have the largest concentration of illeterate population in the world by 2000 A.D. If the present trend continues, India may soon lead in the number of graduates produced among the developing countries, though its literacy rate may remain the lowest' In the recently released **National Policy on Education** (1986), the Government of India has committed itself to the main tasks of strengthening the base of the educational pyramid, i e. elementary education, tackling the problem of adult illiteracy, expanding the provision for vocational education, etc. As far as higher education is concerned, the Government intends taking all steps to protect the system from degradation, and raise standards to highest levels which could be found in advanced countries, and thus make the system "more dynamic as never before." Thus, after the storm and stress of adolescence in which a great deal was done without a thought to the possible consequences, there appears to be a change in the offing towards thoughtful maturity and reappraisal with regard to qualitative improvement, and not just quantitative expansion.

The new priorities, which the Government hopes to pursue simultaneously during the next 13 years, will assuredly entail heavy expenditure. The difficulty is how to raise sufficient resources to fund these reforms so that they do not get stalled in the track well before the journey is completed. Also resource mobilisation will be a serious problem if the present rate of growth of the economy is any indication. Anyway there appears to be a general agreement among many in the country that the crucial areas which need urgent atten tion is elementary and adult education so that illiteracy could be eradicated by 2000 A.D. Here are the two fields where resource constraint cannot be an excute for lack of sustained endeavour. Education at the first level is seen in many countries as the first requisite for a development-oriented education strategy. Further postponement of the needs and requirements of this level of education could lead to a conflict with haman rights in respect of education. Giving importance to it by upgrading Government resources, though belated, is well-justified.

All this would mean a slow down in the rate of growth of Government contribution to higher education which is bound to exert a progressive squeeze on the system, a squeeze compounded by rising units. This makes inevitable a reappraisal of the policy of not only faster expansion of higher education, but also the present system of financing it. In this context a change in the existing financial arrangement which will reduce the overdependence on the scarce resources of the Government assumes great importance An increasing support from private (non-governmental) sources will have to be sought in the years to come if the system has to survive.

IV

The Remedies

A Realistic Fee Policy

In the light of the severe financial constraints, it is necessary to have a fresh look at the existing pattern of financing of higher education. In this context, a change in the existing financial arrangement which will reduce over-dependence on the resources of the Government assumes great importance A reappraisal of the present fee-rate policy has, therefore, become inevitable. The universities/colleges are at present levying fees that were fixed in the fifties The existing rates are very low by any reckoning. While the cost of everything else has been rising, fees have remained stationary for quite some years. If the present trend continues, fees as a source of higher educational finance may loose their importance in the near future. At the time of Independence, fees constituted about 45 per cent of the direct expenditure ; this proportion has now declined to 12 per cent. At the same time, the expenditure has gone up by over twenty times. The financial crisis in the higher education sector could have been mitigated to a considerable extent had there been a

gradual hike in the fee-rates. Instead of a mixed public-private financed system, almost a totally publicly-financed (subsidised) higher education system has been emerging over the years. A system of liberal Government subsidy also exist in many other countries, but there it is coupled with a policy of rationing the number of places in higher education either directly in terms of numbers or, indirectly, via admission standards. The Government of India however, took the stand that every effort should be made to provide admission to all (eligible) students who desired to study further in institutions of higher education, and liberal subsidies be extended to them.

The argument for raising fee-rates stems not only from the viewpoint of building more funds but also from other factors :

(a) The policy of extension of liberal subsidy, indiscriminately to all alike (as reflected in low uniform fee-rates) has mostly benefited those with a favourable socio-economic background, forming nearly 80 per cent of total enrolment. This is more so in the case of the professional/technical category of higher education. The transformation of this largely elitist system into one with a more egalitarian base, remain largely unfulfilled in spite of efforts to change or dilute it. The better-off group, starting with a social and economic edge over the rest of the people has taken advantage to a much greater extent of the existing provisions of higher education as majority of the children belonging to the economically weaker sections do not even cross the primary school stage. Despite the growth of the school system, educational benefits have not reached the mass of the people. Poverty and social deprivation have inhibited them to participate in education. Therefore, keeping the doors of higher educational institutions wide open, and extending liberal subsidy, will be meaningless to this section. Also the fact that higher education is mostly subsidised from revenues raised through indirect taxes, which impinge more on the poor (and the majority of whom being non-users of higher education), does mean that it is this section that virtually subsidises the higher education of those belonging to middle and upper income levels. Thus the policy of uniform subsidy, as is reflected in low fee rates to all, irrespective of the students' economic status, has tended to endorse and/or aggravate inequality rather than reducing it The participation of students by economic position when viewed in the context of heavily subsidised higher education, leads one to conclude that subsidisation is a hidden bonus, or a windfall, to those who can perfectly pay well, even in full, for their higher education.

(b) The rationale for a policy of government investment in higher education is also judged by the social rate of return. A number of estimates of rates of return have been made by researchers in India which show that the social rate of return to higher education is a good deal lower than the private rate, in other words, the community gets back less than what the individual gains from higher education The provision of liberal subsidies (particularly for professional/technical higher education, i e. about 80-85 per cent of the expenditure) reduces the private cost and thereby raises the private return. Considering the fact that the private return is much higher than the social return, cognisance should definitely be taken of it while determining the sharing of the cost burden between the Government and the students. This imbalance between the two rates can be corrected by raising fee-rates. The existing fee-structure in India does not take into account the higher income earning opportunities provided by many professional/technical courses. Those who opt for specialised courses like medicine, engineering, etc. do so in order or improve their economic status and the rewarding system does favour such candidates the most. And paradoxically, the fee income forms a smaller part of (direct) expenditure in such lines of higher education which generate prospects of larger private gains. The demand for admission to medical and engineering colleges in some Indian States outstrips the number of seats that can be provided, and this has led to the most disconcerting system of collecting high capitation fees by private institutions providing such courses. The very fact that a good number of prospective students are willing to pay this price shows that the private gains must be far exceeding the money that they spend. This surely strengthens the case for a system under which the recipients of such professional training meet a major part of the

expenditure on them, instead of leaving the common tax-payer to pickup the bill.

(c) Another related aspect of this problem is that quite a sizeable proportion of highly trained persons in India, at least 10 per cent, after receiving their higher education in India at a high cost, are seeking outlets abroad. They join the brain tank housed in the distance at the end of the journey, motivated by the enormous monetary compensations offered. Today Indian engineers, scientists and doctors are in great demand in the U.S.A., the U.K., and the gulf countries. According to a W.H O study, India happens to be the largest donor of medical manpower in the world. Out of 100 boys trained in the Indian IITs, 25 at least settle abroad. There are also other highly qualified people employed in banks and private institutions outside India. Thus the considerable public investment made on them ultimately benefits other countries instead of serving the large mass of the people of their own country. Is it not clearly a case of a less-advanced country extending aid indirectly in the form of skilled and trained manpower to advanced countries? (It may also be noted in this context that in some advanced countries, those who come from outside are required to pay a very high rate of fee).

There is therefore an urgent need for a review of the prevailing pattern of financing higher education, especially the contribution by way of fees. It is difficult to deny the economic and other arguments for a hike in the fee-rates which bear some reasonable relationship with the cost of providing the courses concerned—at least for courses with better employment opportunities and income prospects. Such a reform is all the more necessary because the vast bulk of the system of higher education at present caters mostly to urban elites and the haves. The social cost is high and the social benefit and the imputed externalities low. So, why continue to provide across-the-board subsidies to all regardless of income (or academic background) ? Should we persist with such a 'monstrous' system where the poor masses pay for the education of the not-so-poor who, moreover, in turn, use their knowledge and skill mostly to their personal advantage? Those who have the means to pay should be made to pay more and those who do not have the means to pay, should receive adequate financial support from the State. This will not only enable raising of the internal resources of higher educational institutions but also extending more scholarships/ freeships to the deserving poor, underprivileged and intelligent students. The institutions have, however, to clearly identify the students belonging to these groups for such special treatment.

It is recognised in the NEP Document that "there is no justification for subsidising higher education to the extent it is being done today. The quantum and nature of subsidisation will have to be related either to merit or to the dictates of social justice", the Document admits. A new World Bank Report **Financing Education in Developing Countries : An Exploration of Policy Options** shows that if governments continue to bear most or all of the cost, there will not be enough resources in the system to meet all the demand. By selectively introducing an increasing user fees for some kinds of education, and by encouraging private sector participation, education could expand and more people could be served. The policies described in the Report have been formulated in the context of inadequacy of existing resources and the exclusion of many people from the education system. A few months back, the Prime Minister of India, while addressing a specially convened meeting of the National Development Council had hinted that Government would have to take a second look at the subsidy extended to higher education especially the professional, technical category. "The scale at which we do it today is totally disproportionate when we look at primary and secondary education", he said, and added that "students would have to pay a reasonable proportion of the actual cost involved. However, the weaker sections would have to be helped and protected in this." Gandhiji, who gave us the most revolutionary principles of education, had pleaded for a higher education system which is self-financing for a number of reasons. He had expressed his opposition to all higher education being paid for from the general revenues. Except for the education of those whose services the State needs, for all other branches of higher learning, he desired that private effort should be encouraged.

Because of the existence of social benefits (necessitating some Government assistance along with contribution from students), making the student pay in full what is being spent on him may not be justifiable. This aspect must also be given some consideration while attempting to alter the existing mode of sharing of the cost burden between the tax-payers and the students—(although there is still no method

to attribute with a fair degree of exactness the external (social) benefits). For the 'Plus Three' part of the higher education stage and at postgraduate levels, the fee-rates may be raised gradually in such a way that the contribution from this source meets at leart 40-45 per cent or 50 per cent of the direct expenditure (instead of the 10-12 per cent as at present). For the first two years of higher education, i.e. the present 'plus two' stage, fee-rates may be kept low as this part could be considered an extension of the school stage. The above arrangement will enable the institutions to cover through fees a good portion (nearly two-thirds) of the expenditure on salaries of teachers The share of the contribution from other private sources (such as donations. endowments, etc.) desirably should be around 15 per cent. thus making the total share from all non-governmental (private) sources around 65 per cent. The Government's share would be around 35-40 of the direct expenditure. In fact. this was the range of sharing pattern that prevailed in late 40s in All-India. What is suggested here is only going back gradually—say over the next five years—to that earlier arrangement of sharing the expenditure so that the students continue to meet the same percentage of direct expenditure that they did 40 years ago. For some professional courses like medicine engineering, etc. wherein the recurring expenditure per student is relatively high. a portion of the government subsidy (say half of it) could be treated as a loan recoverable (with proper monitoring devices) from the future earnings of the students (which are likely to be high as a result of their specialisation in these fields). There are also other activities like provision of hostel accommodation. conduct of examinations. etc , wherein the charges are amenable to a better alignment with costs. Adequate provision for financial support will of course have to be made available to the students belonging to lower income and really meritorious groups of students. This will certainly be an improvement over the existing situation. almost a breakthrough.

Sincere efforts, either by the Government or the institutions, to educate public opinion on the need for a fee rise has not so far been made. The parents/guardians/students and the community have only a hazy idea of higher educational finances; majority of them may not even be aware of the exact quantum (which is quite large) of the subsidy involved in providing the different courses in higher education, especially the professional/technical types. If the true resource costs of these courses, as against private costs to students parents are publicised well, they would radically alter the debate about fees and help clarifying the inequities and inefficiencies underlying the present sharing arrangement Some developing countries have started drawing attention of the public to the fact that college university student should not demand higher education at State expense as a right: the fact that they have survived long enough in the school level for gaining entry subsequently into higher education itself shows that their parents are very likely to have been well-to-do and accordingly can be expected to make substantial contribution to their children's higher education If this is true in India too providing liberal subsidy to all alike is against the very tenets of egalitarianism. Justifying the case for a rise in tuition fees in countries like India, Mark Blaug states. "When we add the fact that in India, as elsewhere, half of the entrants to higher education are likely to have gained their entry qualifications in private secondary schools that charge fees upto Rs. 2000 per year, the clamour not to raise fees and even to lower them can be seen as a demand of the middle class parents to get for free something that they could perfectly well pay for." Blaug pleads for publicising all such facts and with it "the true resource costs of university education as against the private costs to students and parents." □

[To be Concluded]

EDUCATIONAL NEEDS FOR INTEGRATED RURAL DEVELOPMENT

(*Contd. from page* 2)

development management.

12 Project planning, execution and evaluation : Concepts of planning, micro and macro-planning programme planning techniques, functions of executives, methods of project evaluation, manpower planning, constraint identification, etc.

13. Development Communication—Transfer of Technology : Rural communication organization, process and methods of communication, diffusion and rural technology, teaching aids. various agencies involved in agricultural extention. etc.

14. Project : The Agricultural Universities in the country have the necessary infrastructure for several of the subject-wise studies. What is needed is the filling up of the gaps and the initiation of an inter-disciplinary degree programme to meet the diverse needs of managing rural development on sound and scientific lines. □

Management of Agricultural Change in Eastern Uttar Pradesh

"Gradually, emphasis in our educational planning must shift from individual crops to promotion of viable farming system. In addition, more systematic attention ought to be paid to promoting sufficient and economical use of all scarce inputs. Unless determined efforts are made to reduce cost of production of food, surplus food stocks and malnutrition may coexist from a long time to come", said Dr. Manmohan Singh, Deputy Chairman, Planning Commission while delivering the Convocation Address at the fourth convocation of Narendra Deva University of Agriculture and Technology. Excerpts :

Uttar Pradesh is the most populous State of the Union Thus, the pace of economic development in Uttar Pradesh has a major impact on the overall performance of the Indian economy Since 1974-75, there has been an acceleration in the rate of growth of the economy of Uttar Pradesh However, there is still a vast untapped potential Given the great dependence of Uttar Pradesh's economy on agriculture, agricultural performance has a critical influence on the overall performance of the State's economy. There is a visible evidence of new winds of change and fresh modernising impulses are now operating in the agricultural economy of the State. However, there is an urgent need to push ahead at a much faster pace than ever before

The eastern region of Uttar Pradesh, which accounts for nearly 38 per cent of its population, happens to be one of the three backward regions of the State The modernisation and faster expansion of the agricultural economy of this region has to form an essential constituent of any viable growth strategy for Uttar Pradesh This region has mainly alluvial soil which are very fertile It receives adequate annual rainfall in the range of 1200-1400 mm Thus, potentially this region should provide a basis for a prosperous agriculture The region has also got ample resources of groundwater, Yet, agricultural productivity in this region is much lower than that of western region of the State is also lower than the average productivity of the State as a whole

Much thought is being given to raising the productivity of agriculture in this region Your University can play a very important role in working out location-specific development strategies for different parts of this region I lay emphasis on location-specific strategies because even in the eastern region there is a considerable diversity of agro-climatic conditions. For example, problems of soil salinity alkalinity in the districts of Allahabad, Sultanpur, Azamgarh, Pratapgarh and Jaunpur will demand a different approach from the one applicable to the drought-prone district of Mirzapur or some parts of Allahabad and Varanasi districts. Similarly, flood-prone areas in the region require a different approach than the one required for dry-land agriculture Based on a detailed inventory of resources and malady remedy analysis, this university can assist the State Government in preparing agricultural development plans for all the fifteen districts of the region.

Proper planning of land and water use must constitute the core of the new location-specific agricultural development strategies Gradually, emphasis in our agricultural planning must shift from individual crops to promotion of viable farming system In addition, more systematic attention ought to be paid to promoting efficient and economical use of all scarce inputs Unless determined efforts are made to reduce the cost of production of food, surplus food stocks and malnutrition may coexist for a long time to come.

I have a strong feeling that our agricultural practices show a very inadequate awareness of the need to promote economical and efficient use of scarce water resources. In the same manner not much attention has been paid to promote efficient and economical use of fertilisers. It has been estimated that currently only 30 to 40 per cent of the applied nitrogen is actually utilised by the plants The balance is lost due to denitrification and leaching. There is thus an urgent need to strengthen research on nitrogen-use efficiency, particularly under humid conditions. Technologies designed to promote efficient and economical use of scarce resources can be of particular assistance in improving the viability of resource-poor small and margi-

nal farmers who constitute a great majority of our peasantry.

The new agricultural technologies involving use of high yielding varieties of seeds have greatly transformed the outlook for Indian agriculture However, the impact of the new technology on rice farming has been much less than in the case of wheat. This is partly due to the fact that unlike wheat, which is grown under relatively homogenous agro-climatic conditions, paddy lands are characterised by a very considerable diversity of agro-climatic conditions It is. therefore, necessary to intensify the research efforts for evolving appropriate varieties of paddy suited to the needs of diverse agro-climatic conditions Rice is the principal kharif crop of the eastern region of the State but the yield is less than the average for the State. The Seventh Plan lays great emphasis on improving the production and productivity of rice in the Eastern States A special centrally-sponsored programme is now in operation which covers 102 blocks in the eastern Uttar Pradesh. As part of the strategy to increase the productivity of rice in this region, special attention needs to be paid to evolving varieties which grow in deep water conditions in the flood-prone areas.

There is an urgent need to increase the productivity of sugarcane since out of 94 sugar factories in the State in 1985, 41 happened to be in the eastern region and sugarcane yields in this region are lower than the State average.

The Seventh Plan lays special emphasis on increasing the production of pulses and oilseeds. For this purpose, among other things, it is necessary to intensify research leading to high yielding, short duration, resistant to insect and pests and nutritionally acceptable varieties of oilseeds and pulses.

As against population density of 216 for India as a whole in 1981, Uttar Pradesh had a density of 377 persons per square kilometre The population density in the eastern region of the State was 485 Because of such heavy population pressure on land, development activities requiring little or no use of land deserve special attention In this context, development of horticulture, animal husbandry, fisheries and social forestry assumes great significance These activities offer considerable potential but they require a strong back-up of research and extension The region's geographical and climatic conditions are highly conducive to the cultivation of a great variety of horticultural crops and fruits According to the 1981 census, the region had 195 13 lakh cattle but the breed is poor and yield of milch cattle is low The area under forests is about 10 per cent Although it may not be possible to increase this area significantly, there is considerable scope for enhancing the quality of forest cover through expansion of social forestry designed to meet the needs of fuel, fodder and timber of the rural areas The degradation of the environment has assumed alarming proportions and issues relating to ecological balance and stability must figure prominently on the agenda for action. In all these areas, your University can be a pace setter for new forward-looking development thrusts

I gather from the report of the Vice-Chancellor that your University has evolved several high-yielding varieties especially of paddy which have been readily accepted by the farmers. I am also very happy to learn that the University is multiplying and processing seeds of high-yielding varieties to meet the seed requirements of farmers and other agencies However, there is a vast unfinished business We have to expand very substantially the production of quality seeds We have to be alert and must be always on the lookout for new and superior varieties which will have better yield characteristics and will also be less vulnerable to environmental stresses and strains

An effective extension service is an essential condition for transferring useful knowledge from our research laboratories to the farmers' fields The training and visit system of extension which has recently been introduced in Uttar Pradesh is designed to strengthen technical competence of the extension personnel and establish closer links between them and the farming community The modern communication revolution offers exciting opportunities for communicating development messages. I am very happy that the extension education wing of the University, through its Farm Advisory Training and Information and Communication Services has drawn up a large scale programme for all the fifteen districts of eastern Uttar Pradesh

Our development programmes must pay particular attention to the needs of our women A majority of our women stay in villages and are actively engaged in farming as a family occupation They take a big hand in farm operations beginning with the preparation of fields for sowing, in harvesting, collection of grains and storing them in godowns. The upkeep and maintenance of animals is their sole responsibility It will not be an exaggeration to say that rural women are busy from dawn to dusk, with one or other farm occupation. After the

day's hard work they have to undertake the additional responsibility of cooking and feeding their families.

Despite this massive contribution, women do not receive adequate share of the benefits of our development programmes The state of social and economic well-being of our women should be obvious from the fact that unlike most other countries, women constitute less than 50 per cent of India's population In 1971, there were 931 women per 1000 men and in 1981 this ratio improved marginally to 934 In Uttar Pradesh, the sex ratio is still more unfavourable. In 1971, the state had 879 women per 1000 men and in 1981 the ratio was 885 We must adopt effective social and economic measures to reverse this trend

Illiteracy among women is major barrier to the modernisation of our rural economy. The literacy rate in the estern region of Uttar Pradesh which was 24 28 per cent in 1981 is much lower than the national average However, it is still more disappointing that while the rate of literacy for males was 37.6 per cent, it was only 10 73 per cent for females The new education policy approved last year by the National Development Council lays special emphasis on the education of women. I do hope that the Government of Uttar Pradesh will adopt a more aggressive approach to universalise the access to elementary education. I am very happy to learn that this University has started imparting education in home science where mostly rural girls are enrolled. I do hope that after completing their education these girls will go back to villages and create a climate favourable to the adoption of improved practices relating to health, family welfare, nutrition and farming.

Agricultural research, education and extension have been assigned a very important role in modernising our agriculture. Because of the predominance of small and marginal farmers, improving their productivity must be the priority concern in all our research programmes. However, the modernisation of agriculture requires action on several fronts. Thus, extension can not achieve positive results if not backed by adequate and timely availability of inputs such as seeds, fertilizers and pesticides. Expansion of irrigation and efficient use of irrigation potential can greatly enhance the former's incentive to use costly inputs such as fertilizers and pesticides Rural electrification can provide a powerful incentive for increased exploitation of the groundwater potential.

Agricultural credit system must be kept in good shape to enable farmers to invest in farm improvements. In several parts of our country, the phenomenon of mounting overdues in the agricultural credit system is proving to be a major barrier to the spread of maples of modernisation in our rural economy These tendencies must be effectively curbed. Institutional reforms designed to protect the interests of share croppers and to promote consolidation of holdings are also essential for the modernisation of agriculture. At the same time, arrangements for the marketing of produce also need to be improved so as to provide farmers a remunerative return for their effort. Expansion of the network of rural roads, rural godowns and the setting up of regulated markets and effective arrangements for procurement of surplus produce at remunerative prices are other important elements of a forward-looking agricultural policy. But it is equally necessary to adopt efficient post-harvest technologies so as to increase the farmer's share of the price paid by the final consumer. An efficient organisation of agro-processing activities and a productive use and recycling of agricultural wastes and residues can contribute a good deal in increasing incomes in rural areas. In all these matters, the State Government has, no doubt, a major responsibility. The agricultural economy of the eastern region of Uttar Pradesh is certainly on the move. The Seventh Plan of U P contains many constructive thrusts to further modernise the rural economy of Eastern U P. at a faster pace Your University must act as an active partner in this gigantic national effort □

PG Courses in Footwear Science

The Academic Council of the Anna University has approved introduction of a two-semester postgraduate diploma course and a three-semester M. Tech degree Course in Footwear Science and Engineering from the current academic session. It has also approved the regulations, subjects of study and detailed syllabi for the proposed eight semester B.E. in Mining Engineering.

According to Dr V.C. Kulandaiswamy, Vice-Chancellor, the Central Leather Research Institute had agreed to collaborate with the University in offering the industry-related footwear science course and the Neyveli Lignite Corporation in running the degree programme in mining

Two New Colleges for Parmar University

The Y.S Parmar University of Horticulture and Forestry has decided to set up two new colleges—the College of Horticulture and the College of Forestry Both the colleges are expected to start functioning from the current academic session

The College of Horticulture will have departments of Fruit Culture & Orchard Management, Fruit Breeding & Genetic Resources, Post-Harvest Technology, Vegetable Crops and Floriculture

The College of Forestry will comprise three departments, viz., Department of Sericulture & Agro Forestry, Department of Resource Mangement and the Department of Tree Improvement and Genetic Resources.

Seats Reserved for Pondy Students

The Agricultural University at Bangalore is reported to have earmarked ten seats in agricultural courses for the students from Podicherry. Likewise, the Tamil Nadu Agricultural University has set apart five seats in B.V.Sc, three in Agricultural (Engineering) and one in Horticulture.

Two seats for M.B.B.S. course and one seat for B. Pharm in Kerala and one B.Sc. (Fisheries) seat in Bangalore have also been reserved for Pondy students. The Gujarat

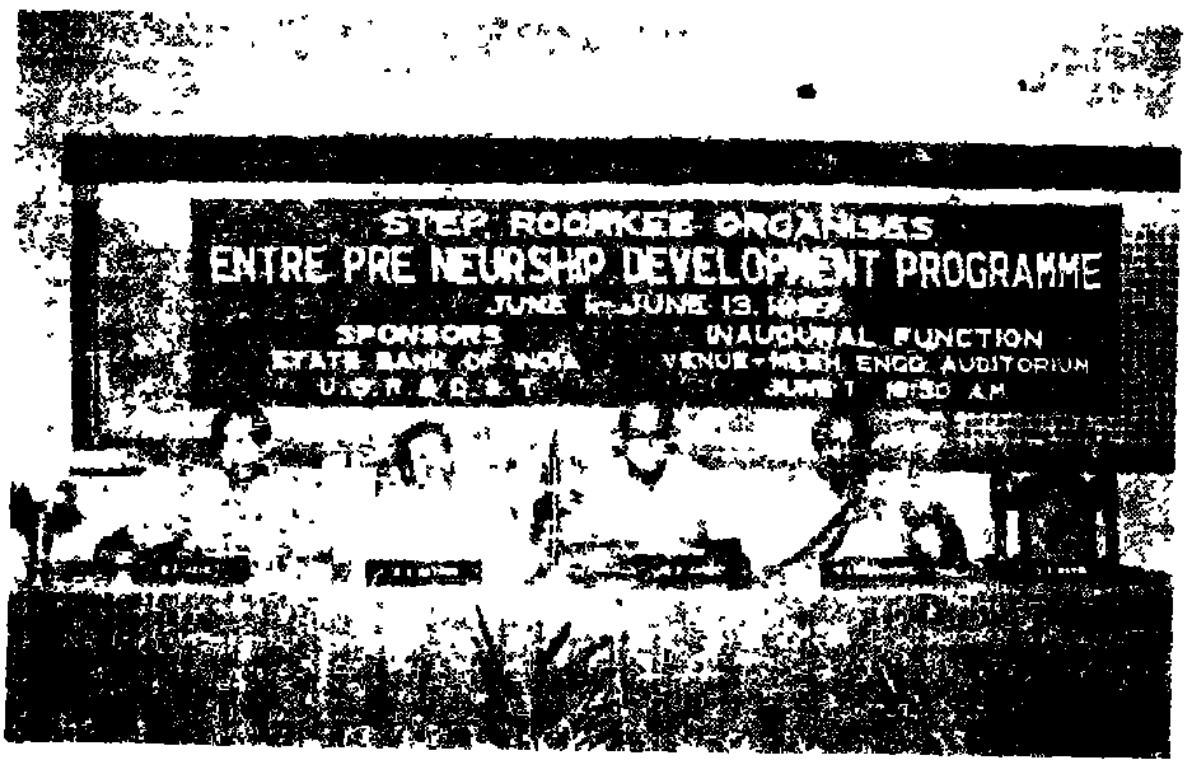
Entrepreneurship Development Programme

Science & Technology Entrepreneurship Park, Roorkee organised a two-week Entrepreneurship Development Programme for the students of Roorkee University from June 1-13, 1987. Sponsored by the University of Roorkee, State Bank of India and DST, the programme was inaugurated by Padmashri C.P Joshi, Chairman, U P Electronics Corporation Ltd , Lucknow Prof N.C. Mathur, Vice-Chancellor, University of Roorkee, presided while Sri S.J. Maheshwari, Chief Regional Manager, State Bank of India, Meerut, delivered the keynote address

The participants were given Achievement Motivation Training (AMT) which prepared the background for further training on entrepreneurship development and helped to bring out positive aspects of their personality Technical sessions were held on product identification, marketing, financial management, inventory control and management, production management, sales management, banking and financial schemes and project report preparation

Market survey was also conducted and prizes for the best (i) market survey report; (ii) management games, and (iii) project report on STES were given.

Over 20 participants which included engineering graduates, postgraduates and teachers/officers attended the programme.



Sitting from left to right are : Dr. M P. Jain, Director, STEP, Roorkee, Dr N.C. Mathur, Vice-Chancellor, University of Roorkee, Padmashri C.P. Joshi, Chairman, U P. Electronics Corporation Ltd., Lucknow, and Shri S.J. Maheshwari, Chief Regional Manager, State Bank of India, Meerut.

University is also reported to have placed at the disposal of the Pondicherry Government one seat in dairy technology course.

Ramanujan Professorship for Prof. Sreekantan

Prof. B.V Sreekantan, former Director of the Tata Institute of Fundamental Research (TIFR), Bombay has been selected for the first Ramanujan Professorship Award of the Indian National Science Academy (INSA). The award, instituted by the Academy this year to mark the birth centenary of the mathematician Srinivas Ramanujan, carries a monthly stipend of Rs. 3,500 - alongwith all the allowances permitted by Indian Institution where the awardee chooses to work. A contingency grant of Rs. 2000 per annum is also included in the award Prof. Sreekantan is likely to work in the TIFR itself in the fields of cosmic rays and high energy physics which have been his major areas of work.

Autonomous Status for 500 Colleges

The University Grants Commission (UGC) has decided to accord autonomous status to 500 colleges in the country during this year. This was revealed by Prof. K. Satchidananda Murty, Vice-Chairman of the UGC, in Pondicherry recently. He said that 50 academic staff colleges, including one in Pondicherry, would also be started. The UGC, he added, had finalised the guidelines for opening of State Councils for higher education which would act as an effective mechanism to access the working of the Univerties.

Vocational Courses for Women Drop-Outs

The H.J. College of Education, Bombay, proposes to introduce income-generating courses for women drop-outs aged 16 and above. These courses will be conducted free of cost and the candidates will be taught to repair watches, clocks and electrical appliances, book-binding, screen printing, doll-making and art work. After the satisfactory completion of the course, certificates will be awarded to the candidates Further details can he had from the Principal. H.J. College of Education, 16th Road, Khar, Bombay-400052.

Another Engg. College for Punjab

The Punjab Government is understood to have decided to set up an engineering college at Bhatinda. Estimated to cost Rs. 15 crores, the proposed college would cater to technical education needs of the students of Bhatinda Faridkot and Ferozepur districts of the state. The Punjab Governor, Shri S.S. Ray, has laid the foundation stone at a 15-acre site acquired for the purpose. The academic session is expected to start from the 1988-89

New Courses at HP University

The Himachal Pradesh Agricultural University is reported to have decided to introduce a post-graduate course in Home Science from the current academic session. This was announced by the Vice-Chancellor of the University, Dr. G C. Negi, in Shimla recently.

He further said that three more disciplines, viz., clothing and textile, child development and extension and home management were also being introduced.

10 Crore Aid for Pondy University

The University Grants Commission (UGC) is reported to have sanctioned a grant of Rs. 10 crore to Pondicherry University for implementing various innovative projects, starting new departments and improving its infrastructure. This was stated by the Vice-Chancellor of the University, Dr. K. Venkatasubramaniam, in Coimbatore recently.

Degree Course in Agril Engg

The Haryana Agricultural University has introduced a new 4-year degree course in Agricultural Engineering from the current academic session.

With the adoption of 10+2 pattern of education by Haryana, the University has converted the 5-year B Sc degree course to 4-year degree course

Children's University

The Indian Council for Child Education, New Delhi, proposes to set up a Children's University The first of its kind in the country, the proposed university would provide education to the children upto 14 years of age. According to Mr. B D. Jatti, Chairman of the project, a 200-acre site has been selected on the Haryana-Delhi border and the modalities for setting up of the university are being worked out.

We Congratulate . . .

(1) Sri Kamaleswar Bora who has been appointed as Vice Chancellor of the Dibrugarh University, Dibrugarh.

(2) Prof. U.R. Ananthamoorthy who has been appointed as Vice-Chancellor of the Gandhiji University, Kottayam.

(3) Dr. S.N. Das who has taken over as Vice-Chancellor of the Patna University, Patna.

(4) Dr. G.K. Narayana Reddy who has been appointed as Vice-Chancellor of the Karnatak University, Dharwad.

News from Agril. Varsities

National Workshop on Biogas Technology

Commander Narindra Singh, Adviser to the Government of India, Department of Non-Conventional Energy Sources in the Union Ministry for Energy, said that the biogas resources should be considered in their right perspective irrespective of the type of biogas plant being constructed. He was inaugurating a two-day National Workshop on Biogas Technology at the Punjab Agricultural University (PAU) He further said that there must be a sound economic return of the investment being made by the Government in the biogas development programme.

He advised that plants should not be under-utilized as it would be a sheer wastage of money invested on them He said that the institutional biogas plants should be encouraged in the urban areas which had good resources and less complexity of problems All types of wastes including animal and human waste should be used in the biogas plants, he added.

Dr, Sukhdev Singh, Vice-Chancellor of the PAU, said that biogas plants could play a significant role in the uplift of rural areas and the quality of life. He said more community and institutional biogas plants should be constructed keeping in view the environmental improvement.

Dr. S.R. Verma, Dean of the College of Agricultural Engineering, said that biogas was an important source of renewable form of energy and had a lot of potential. He said that while installing the biogas plant, the social, economical and technical aspects must be kept in view.

Trapping Crop Insects

A know-how has been developed by the Department of Farm Machinery of the Tamil Nadu Agricultural University (TNAU), Coimbatore, to trap the crop insects by using the traditional power sprayers The project was carried out in collaboration with the Department of Entomology. The device employs suction, created by the power sprayer blower, to 'catch and kill' the insects.

Field tests conducted in paddy, sorghum, cotton and sunflower fields proved effective for trapping insects like hoppers, midges, earhead bugs, white flies and ash weevils during severe outbreak Since majority of the insects trapped was found to be alive, there is scope for using this gadget as a large scale sampling device. This simple attachment can be easily fixed to any power sprayer. The cost of the attachment is Rs. 170.

Engine Operated Paddy Transplanter

Mr Manohar Singh Gill, Financial Commissioner (Development), Punjab, while speaking at a function organised by the Punjab Agricultural University (PAU) to demonstrate the working of an engine-operated paddy transplanter, said that mechanisation of transplanting of paddy was very necessary as timely transplantation could give higher yield of the crop. He emphasised that the farmers should put more area under cotton, sugarcane and oilseeds without affecting the production of cereal crops like wheat and paddy. By promoting the cultivation of oilseeds, the country could save Rs 1000 crores which were being spent annually to import edible oils, he added.

Dr. Sukhdev Singh, Vice-Chancellor of the PAU, who presided, said that adequate plant population played a significant role for higher yield of paddy. He hoped that mechanised transplanting of paddy would save time, labour and money.

Dr. Khem Singh Gill, Director of Extension Education of the PAU said that the reason behind the low paddy yield was less number of paddy plants per square metre. He stressed that 33 seedlings in a square metre should be planted. He hoped that by adopting the mechanised transplanting of paddy and following the latest farm technology generated by the University, the per acre average yield could be increased further.

News from Abroad

National Health Research Centre

The Australian Government has decided to set up a new National Centre for Epidemiology and Population Health at the Australian National University (ANU) in Canberra at an estimat-

ed cost of $9.25 million. An agreement to this effect has been signed by the Minister for Health, Mr. Neel Blewett and the Vice-Chancellor of ANU, Prof. Peter Karmel. The Centre will investigate the reasons why Australians suffer diseases like cancer, heart diseases and sexually transmitted viruses.

The Centre will inform and advise the Government on how to deal with community health problems facing Australians—including the care of a growing aged population and the prevention and treatment of heart disease, cancer, sexually transmitted diseases and injuries suffered in the workplace.

Scientists from various disciplines including demography, economics, medicine, sociology and biology will work at the new centre. They will carry out population studies focussing on fertility and infertility mortality rates, and the social and economic impact of changes in population densities throughout Australia.

The Research School of Social Science at the ANU will link with its John Curtin School of Medical Research, the Social Psychiatry Research Unit and other ANU faculties in conducting research for the centre. The director of the ANU's John Curtin School of Medical Research, Professor Bob Porter, said: "The significant and important research being done, for instance, in demography, statistics, economics and sociology, will provide the new centre with a solid foundation of quality work which is unique in Australia" He further said he could envisage laboratory-based scientists at the new centre advising medical authorities on clinical trials and screening for disease.

The centre will enrol graduate students and offer intensive courses as well as conducting research. It will employ about 15 academic staff. The position of director will be advertised internationally and is expected to be filled by early 1988.

Advanced Studies in Publishing

The Department of Design at Oxford Polytechnic announces a special one-year course of study leading to a Diploma in Advanced Studies in Publishing. Because of the flexibility of the programme, each student is able to develop a self-selected course, whether to acquire or extend particular vocational experience or to explore personal interests. The course is mostly taught individually or in small groups and is particularly suited for those seeking careers in publishing. For more information contact: Mr Bob Woodings, Field Chairman, Publishing, Design Department, Oxford Polytechnic, Oxford OX3 OBP, England.

Sports News

Varsity Hockets for National Camps

The Indian Hockey Federation has selected four junior hockey players from universities as probables for attending the National Coaching Camp being held at Delhi from 15th July They are Jagdish Chander (Lucknow) Pradeep Sharma & Mohd Yashin (Meerut) and Shakil Khan (Bhopal) The Federation has also selected Jagdev Singh and Daljit Singh of Guru Nanak Dev University as probables to join the coaching camp in preparation of the Indian team for the next olympics The coaching camp is in progress at the NS NIS Patiala since 1st July 1987

Short-Term Research Visits to FRG

The University Grants Commission has asked the universities to nominate teachers in universities and its affiliated colleges for short-term research visits (not exceeding 3 months) to Federal Republic of Germany (F.R G.) during 1988

Priority will be given to those scholars who have already established contacts with the German scholars/institutions in different fields including Indology and Philosophy. The selected teachers would be provided to and fro travel expenses by the University Grants Commission subject to the acceptance of their visits by the German authorities The German authorities would pay a suitable maintenance allowance and provide other facilities to the scholars in terms of the Cultural Exchange Programme.

Interested teachers may contact their own universities. The universities have been asked to forward the nominations to the University Grants Commission latest by 31st July, 1987.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
September 18-21, 1987	National Seminar on Energy Education	To discuss various aspects of energy education—meaning and scope, resources, institutionalisation, teacher preparation, curriculum development, and role of mass media.	Department of Education, Rohilkhand University	Dr. Beena Shah, Organising Secretary, NASEEZ, Department of Education, Rohilkhand University, Bareilly-243 001, U.P.
Sept 21 - Oct. 4, 1987	Training Course in Research Methodology in Geography	To expose the participants to research methods in Geography and quantitative and cartographic techniques employed in Geographical research	Department of Earth Sciences, Manipur University, Imphal.	Dr. R P. Singh, Dpartment of Earth Sciences, Manipur University, Imphal.
Novemher 14-16 1987	First Biennial Conference of the Allahabad Mathematical Society	It is proposed to cover Extension Problems in Topology, Number Theory, Cosmology and Statistics	Allahabad Mathematical Society, Allahabad-211 001	Professor P. Srivastava, Secretary, Allahabad Mathematical Society, 10, C S P. Singh Marg, Allahabad-211 001
November 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
November 19-21, 1987	Eighth Maharashtra Political Science Conference.	Main topics proposed to be discussed are: (1) National Integration; (2) Politics of Education; (3) Politics of World Peace, (4) Politics of Terrorism.	Nutan Mahavidyalaya, Sailu.	Sh. D.R. Kulkarni, Principal, Nutan Mahavidyalaya, Sailu - 431503 Dist. Parbhani. (Maharashtra).
November 25-27, 1987	International Conference on Mud Architecture	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboraton with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
November 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electroanalysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman of the Organising Committee, S.J. College of Engg., Mysore.
December 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.

Maharashtra Association for the Cultivation of Science

Law College Road : Pune 411 004

This Institute proposes to admit a number of students and research scholars for the following degrees of the University of Poona :

1. M. Phil. in Biometry—6 seats
2. Ph. D. in the following disciplines :

   (a) Biometry—3; (b) Botany (Systematic Botany—1, Genetics—1 and Mycology—5).
   (c) Geology—4; (d) Microbiology—2; (e) Zoology—1.

Candidates must possess a higher second class, preferably first class M.Sc. degree in the respective subjects. For M. Phil. degree in Biometry, candidates with M.Sc. degree in Statistics, Biometry, or Nutrition as major subject with biology background or M. Sc. with Biochemistry or Biology are eligible. Candidates with degree in medical sciences and M.A. in social sciences are also eligible. Limited number of MACS fellowships are available for Ph. D. course. Those who already possess a fellowship from other sources will be given preference. Hostel facilities are available for male students.

Blank application forms with prescribed conditions can be had from the Institute, personally or by sending M.O./I.P.O. for Re. 1/- drawn in favour of the Registrar, M.A.C.S. Pune 4 and a self addressed envelope ($9\frac{1}{2}'' \times 4\frac{1}{2}''$) bearing stamps worth 75 p.

Last Date for receiving completed application forms is 31st July 1987.

C S. Nakate
REGISTRAR

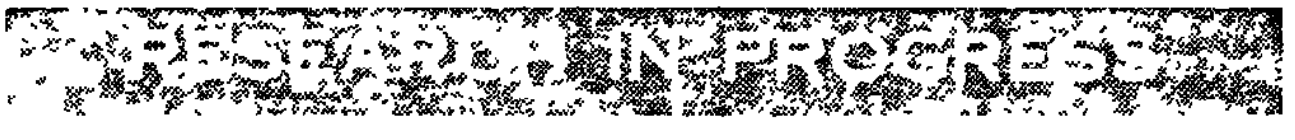
AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-00 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.



A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Library Science

1 Sharma, A K. *Hindi mein sandharbha sahitya ka udabhava evam vikas . Alochanatmak adhyayan* Jiwaji Dr. S M Tripathi

2 Sharma, Anil *Information and reference sources in physical education · A critical and comparative evaluation with special reference to users' needs* Jiwaji Dr S M Tripathi

3. Sharma Hemant. *Special libraries in M P . A critical evaluation in the light of users' needs* Jiwaji Dr. S M Tripathi

4 Singh, R.B *Madhya Pradesh Vishwavidyalaya granthalaya mein vyoharik prasuchikaran upyogita tatha vikas kee sambhavana* Jiwaji. Dr S M Tripathi.

5. Tomar, Surendra Singh. *Public library movement in Madhya Pradesh : A critical study* HS Gour. Dr. H B. Sengar.

Sociology

1. Corona, Sr. *Evolving a programme for attitudinal changes in women* Teresa. Dr Mary Josephine Louis.

2. Mala, Jahan. *Continuing education for women of Kodaikanal* Teresa. Dr. Thara Bhai.

3. Muthuchidambaram, S. *A study of professional women, Tamil Nadu.* Teresa. Dr. Thara Bhai

4. Rubarani *Abortion among women . A socio psychological approach.* Teresa. Jayalakshmi

Political Science

1. Chaturvedi, Pradeep Kumar. *Samkaleen Bhartiya rajniti ke sandarbh mein Gandhijee ke satyagrah ke vichar evam vyavhar ka adhyayan.* Devi Ahilya Prof. B R. Sadh.

2. Deyannawar, S K *Integrated rural programme for weaker sections in drought area A case study of Bijapur District* Shivaji. Dr. K.K. Kavlekar.

3. Mishra Ashok Kumar. *Bhartiya rajnitik pranali kee pramukh pravrittiyan* HS Gour Dr. R P Gautam

4 Mkem, Nzenwa Barthelanew. *Administrative relations in federal systems . Comparative study of centre-state relations in India and Nigeria.* Kerala. Dr G. Gopakumar

5 Samale, R *Problems and prospects of national integration in India · Tamil Nadu · A case study* Kerala Dr D Jayadevadas.

6 Shaji, K. *Regionalism in North-Eastern India : A comparative study of Assam and Nagaland.* Kerala Dr. D. Jayadevadas.

Economics

1. Chaturvedi, Anjuna. *Krishi utpadon ka vipnan : Sagar sambhag ke sandarbh mein* HS Gour. Dr. M.L Tripathi.

2. Devdutt Ramani. *Socio economic status of self employed slum women A case study of impact of bank-financing on self employment in North Madras* Teresa. Dr. K. Shanthi.

3. Gangadevi S. *Polytechnic education and employment of women in Tamilnadu* Teresa. Dr Yashoda Shanmuga Sundaram

4. Kalarani. *A study of women labour in match industry in Kamaraj Dt* Teresa. Dr. Rosy Thanikkal

5. Parvathi Devi. *Women workers in the unorganised sector.* Teresa. Dr. Yashoda Shanmuga Sundaram.

Law

1. Dube, Nisha. *Euthanasia . An inter disciplinary study* Devi Ahilya. Dr. G.C, Kasliwal.

Education

1 Anusooya, V. *A critical analysts of branch XII Tamil literature curriculum with special reference to women* Teresa. Dr. Mary Josephine Louis.

2. Gaikwad, Arun Baburao *A critical study of impact of teaching population education on pupil teachers in colleges of education affiliated to Shivaji University, Kolhapur* Shivaji. Dr. R.B. Dewasthalee.

3. Girija, S. *A cognigance of the aims and purposes of English teaching as perceived by women teachers in higher secondary schools in Madras* Teresa. Dr. T. Vasanthakumari.

4 Innocentia, A.J M. *An enquiry into the relationship between education and employment of women and the size of the family.* Teresa. Dr. Pankajam.

5. Jaya Malika, B. *A comparative study of the relationship of self concept, anxiety and intelligence to school achievement of adolescent boys and girls in higher secondary scools* Teresa. Dr Ethel Salma Balachandran.

6. Manjulavalli, B. *Preparing teachers for a programme of population education for girls* Teresa. Dr. Mary Josephine Louis.

7. Mary Rosario Fatima *Evolving a programme of value oriented education for primary school girls.* Teresa Dr. Pankajam.

8 Mohanambal, K.V. *A study of level of aspiration of women students belonging to different socio economic status* Teresa. Dr. Savithri Krishnan

9. Padmavathy, K.V. *A study of the factors influencing the value sense found among girl students of standard X.* Teresa Dr S Sekhar.

10 Sathe, Narayan *Comparison of reception strategy, selection strategy and induction method in attaining concepts of general science by IX class students.* Devi Ahilya, Dr. D.N Sansanwal

11. Vasuki, K *Constraints that limit the educational achievement of school going girls.* Teresa. Dr. Pankajam

Home Science

1. Punithavathiar, S. *Evaluation of awareness of women students on child rearing practices.* Teresa. Dr Pankajam.

2 Ramasubbamma. *A study of the impact of maternal employment on the physical and mental development of pre-school age children* Teresa. Dr S P. Rahgir

3. Satagopan, Kumudha *Impact of governmental welfare programmes on the quality of rural women* Teresa. Dr. Godhawari Kamalanathan.

HUMANITIES

Language and Literature

English

1. Danalackme. *Pearl S. Buck and Kamala Markandeya : A comparative study.* Teresa. Dr Mercy Louis J. Royan.

2. Felicina, S. *The ethos of Indian women in Indo-Anglian short-stories of women writers of the post-independence era.* Teresa. Dr. C V R. Vatsala.

3. Madhavan, Sudha *Womanhood in Sri Aurobindo's literary works with special reference to Savitri.* Teresa. Dr K.M. Shantha.

4. Manickavalli, Caroline. *Women in mass communication.* Teresa. Dr. Rosy D'Souza.

5. Mohyal, Kulal. *Women's problems as represented in Indian American literature.* Teresa. Dr. (Ms) Primula Newsam.

6 Muthulakshmi, T.S. *Feminism in Indian writing* Teresa. Dr. Mercy Louis J. Royan.

7. Narasimhan, Maya *Dorris Lessing-women in quest of herself.* Teresa Dr. Seetha Srinivasan.

8. Nazneen. *A study in the ethics of womenhood with special reference to the novels of Angela Carter.* Teresa. Dr. C. Vatsala.

9. Padmasani Kannan, S. *Socio-economic status of Indian women in Kamala Markendeya's novels.* Teresa. Dr. Rosy D'Souza.

10 Saraswathi, T.C *The image of women as reflected in Indian and American writings.* Teresa. Dr. K.M. Shantha.

11 Singh, Celestina Jeya. *Women English teachers and their problems of teaching English in under graduate classes.* Teresa Dr. Rosy D'Souza.

12. Stephan, Margaret *Treatment of women by Nayantara Sahgal.* Teresa. Dr. V. Saraswathi.

13 Talwar, Sree Rashmi. *Women novelists and the changing social values.* Teresa. Dr C.T. Indra.

Sanskrit

1 Sathikumari, C *Kavyalankara sarasangraha of udbhata. A study.* Kerala Dr. N Gopalapanicker.

2. Sobhanakumari, S *Concept of bhakti in the Narada bhaktisutras* Kerala. Dr. Jacob Kattackal.

Hindi

1. Tewari, Purshottam Lal, *Adhunik Ramkavya parampara ke sandarbh mein Ramchandra Bhargava krit Ramcharitra ka anusheelan.* HS Gour. Dr V P Tiwari.

Marathi

1 Bhosale, T R *Mardhekrottar Marathi kaviteteel pratibha srishti vishesha Arti Prabhu ani Dilip Chitre yanchya anushangane.* Shivaji. Dr T.B. Tapare.

Tamil

1. Arachi, V. Hermana Gilt *Position and status of fisher-women in Kanyakumari* Teresa. Dr Ruth Joy.

2 Guruswami, Indrani. *The status of widows in Tamil Nadu through the areas.* Teresa. Dr Thayammal Aravanan.

3. Indra, R *Concept and problems of women as depicted in the Tamil magazines run by women and for women in pre-independence and post-independence period.* Teresa Dr V P Devadatta.

4 Kamala Vijayarani, D *Dowry system as depicted in modern novels and poetry A sociological perspective, 1970-1980.* Teresa. Dr Cornelius.

5 Muthulakshmi, S *Position and status of fisher women in Tuticorin.* Teresa Dr. P. Soundra

6. Saraswathi, K. *Position and status of Adivasi women at Ooty, Irular and Kurumbar.* Teresa. Dr V P. Devadatta.

7. Sarojini, K Janaki Padmini. *Indian women . From 20th century marching into 21st century* Teresa. Dr. Rajammal P. Devadass.

8. Sundara Bai, P. *Status of tribal women in Mount Mahendra, Kanyakumari* Teresa. Dr. Ruth Joy.

9 Uganayaki, S. *Cultural conflict and the status of women in Tamil Nadu.* Teresa. Dr. Sarada Rajagopalan.

Geography

1 Talikeri, N.B. *Spatial organization of periodic market centres in Solapur District : A Geographical appraisal.* Shivaji. Dr A.D. Mulik.

History

1. Albaris, G *History of fishermen in Travancore.* Kerala Dr. D. Sabhanan.

2. Anandalakshmi, V. *The role of women in political, socio-religious economic and cultural spheres in Andhradesa*

In the 19th and 20th centuries. Teresa. Dr. A Suryakumari.

3. Dachayani, Tara Bai. *Women administrators in Tamil Nadu.* Teresa. Dr. A. Suryakumari.

4. Goyal, Trishla. *Position of women in the post independent Tamilnadu.* Teresa. Dr. Balambal.

5. Kumari Vanaja, H.B. *Swadeshabhimani Ramakrishna Pillai and political awakening in Travancore.* Kerala. Dr. V. Sankaran.

6. Lalitha, K. *Participation of women in economic, social and cultural development of Tamil Nadu, 1857-1964.* Teresa. Dr. A. Suryakumari

7. Manoranjitham, P.V. *Historical perspective of the women of Piramalai Kallar Community of Madurai District* Teresa. Dr. A Suryakumari.

8. Mohandan, P.M. *Agrarian movements in Travancore, 1000-1947.* Teresa. Dr. B. Sabhanan.

9. Pitchai Savariammal, M. *The position of women in the Paliya community in Sivagiri.* Teresa. Dr. A. Suryakumari.

10. Sundaram, Hema. *Women's movements in Tamilnadu.* Teresa. Dr. Vasanthi Devi.

11. Thiyagarajan, Jamuna. *History of distance education and development of women in Tamil Nadu with special reference to the Institute of Correspondence education, University of Madras.* Teresa Dr. A. Suryakumari.

12. Thomas, Vimala. *Socio-economic consequences of land reforms in Kerala since 1957.* Kerala. Dr. B. Sabhanan.

13. Uma, N. *Contribution of women in Tamilnadu to fine arts.* Teresa. Dr. A. Suryakumari.

14. Vijayalakshmi, M.N. *E V.R. reforms related to women* Teresa. Dr. A. Suryakumari.

15. Vijayalakshmi Amma, K.G. *Political status of women. in Kerala.* Teresa. Dr. A. Suryakumari.

16. Visweswaran, Kamala. *Role of Tamil women in India's movement for independence.* Teresa. Dr. A. Suryakumari.

THESES OF THE MONTH

A List of Doctoral Theses accepted by Indian Universities

SOCIAL SCIENCES

Journalism

1 Bhaumik, Nibedita. *Prak swadhinata jugar abibhakta Banglar mafassaler samajik patra patrikar dhara, 1818-1947.* Calcutta.

Psychology

1. Manmohan Singh, B.K *Occupational heredity (Inheritance) : A study of attitudes and values of medical practitioners with similar and dissimilar parental professional background.* Osmania

2. Sud, Sonali *Worry emotionality and task-generated interference in test anxiety : An empirical test of attentional theory in Indian settings.* H.P.

Sociology

1. Chouksey, Pramod Kumar *Prostitution in Madhya Pradesh.* HS Gour.

2 Jain, Jinendra Kumar. *Samajik vyavastha ka nyayik prakriya per prabhav ka tulnatmak adhyayan.* Bundelkhand.

3. Kulshreshta, Manjulata *A socio-psychological study of attitudes towards religion and untouchability amongst college students* Bundelkhand.

4. Nikhilesh Kumar *A sociological study of medical profession.* NEHU.

5. Shukla, Ganesh Datt. *Socio perspectives in cares attending psycheatric service of a teaching general.* Bundelkhand.

6. Vishwakarma, Ram Swarup. *Swatrantrayottar Bundelkhand Sambhag mein prarambhik shiksha ka vikas aur uski samasyaon ka samajshastriya adhyayan, 1950-1980. Bundelkhand.*

Political Science

1. Bora, Neeta. *Anusoochit jatiyon ke rajnitik vikas mein arakshan kee bhoomika : Nainital Janpad ka ek adhyayan Kumaun.*

2. Mishra, Sarojbala. *India's relations with Sikkim after independence.* Bundelkhand.

3. Pandey, D.C. *Municipal administration and politics in Kumaun. D. Litt.* Kumaun.

4. Tripathi, Janardan Prasad. *Shri Jai Prakash Narayan ka Bharatiya rajniti mein yogdan, 1971 ke uprant.* Bundelkhand.

5. Vijaychandra Naidu, G. *Asean and the major powers.* JNU.

Economices

1. Chahande, Kamal. *Savner Tehsil Matheel gramin strimajoor tyanchya samajik va arthik samasyanchya.* Nagpur.

2. Gupta, Manoranjan. *Migration, unemployment and development.* Calcutta.

3. Kandpal, H.D. *Kumaun ke arthik vikas mein sehkari andolanon kee bhoomika : Niyojan ke prarambh mein.* Kumaun.

4. Mohi, Mohammad Ali Abdullah, *Indo-Iraq economic relations, 1960-80.* Durgawati.

5. Mustafa, A. *Floods in Tamil Nadu.* Madurai.

6 Shah, Mihir *Capitalist development and the transformation of agrarian relations in Chingleput District, C. 1780-1983.* JNU.

7. Singh, Sanjay Kumar *Performance of development banks in India since independence.* Bihar.

Education

1. Darshana Kumari. *Intellectual commitment and educational interest in relation to certain cognitive and non-cognitive variables.* Jammu.

2. Gautam, Pushpa. *Development of programmed instruction in linear and branching styles and studying the performance in relation to creative thinking and level of aspiration.* HP.

3. Narayana, S. *A study of the general English courses at the undergraduate level in Osmania University.* Osmania.

4 Sant, D.K. *Shodh vigyan kosh : Sadhan aani sandharbh granth. D. Litt.* Shivaji.

5. Sayed Nurjehan Abubakar. *The relationship between cognitive personality and biographic variables and preference for teacher behaviour of secondary school students.* Karnataka.

Commerce

1. Ali, Mohammed Mehmood. *Capacity utilization in Engineering Industry in Kolhapur City.* Shivaji

2 Awasthi, B.D. *Accounting for price level changes : A case study of Indian Corporate Sector and development of a normative model.* Kumaun.

3. Diwakar, Ravindra Kumar. *Madhya Pradesh ke krishi vikas mein sehkari andolan ka vishleshanatmak adhyayan : Samasyayen evam sambhavanayen.* HS Gour.

4. Kapoor, D. *Industrial leadership : A case study of Rampur Raza Textiles Pvt. Ltd.* Kumaun.

5. Khazel Asmail Abrahaeam. *India-Iraq trade and economic relations.* Delhi.

6. Mango Ram. *Marketing of rosin and turpentine in Jammu & Kashmir.* Jammu.

7. Prabhakara Raya, Rampalli. *Paddy, rice marketing system in Andhra Pradesh.* Andhra.

8. Suresh Chand. *Cost and profitability of commercial banks in India.* Delhi.

CLASSIFIED ADVERTISEMENTS

ADMISSIONS

MANIPUR UNIVERSITY

CANCHIPUR : IMPHAL

ADMISSION NOTICE

Dated, the 22nd June, 1987

No. MU/3-1/81 : Applications are invited for admission to M A /M Sc /M. Com. (Previous) Courses in this University for the session 1987-88 in (1) Anthropology, (2) Chemistry, (3) Earth Sciences, (4) Life Sciences, (5) Mathematics, (6) Physics, (7) Commerce, (8) Economics, (9) Education, (10) History, (11) Political Science, (12) English Language & Literature, (13) Hindi, (14) Linguistics, (15) Manipuri Language & Literature and (16) Philosophy.

Candidates who passed the Three-Year Degree Course or equivalent examination under the 10+2+3 system of this University or any other University may apply for admission to M A /M Sc /M Com. (Previous) courses Detailed information about the qualifications for admission and other conditions are laid down in the BROCHURE FOR ADMISSION TO POST-GRADUATE COURSES of the University to be supplied along with the application form for admission

Applications (in duplicate) in the prescribed form available in the Sales Counter of this University on payment of Rs 5/- (Rupees five) in cash or by sending a postal order/Bank Draft of Rs 5/- (Rupees five) payable to the Registrar, Manipur University, Imphal-795003 along with a self-addressed 90 paise stamped envelope of 28 cm x 13 cm will be received by the concerned **Head of Department of the University** upto the **7th August 1987** In the case of Education, the applications will be received by the Dean of School of Social Sciences and in the case of Philosophy the applications will be received by the Dean of School of Humanities upto the **7th August, 1987.**

The dates for admission test and the names of candidates to be invited for the test will be notified on the Departmental Notice Boards of the University.

Th. Joychandra Singh
REGISTRAR

UNIVERSITY OF MADRAS

NOTIFICATION

Applications are invited for admission to Certificate/Diploma Course conducted in the University Departments for the year 1987-88.

Application forms can be had from the Registrar, University of Madras on payment of Rs 20'- by means of Demand Draft drawn in favour of the Registrar, University of Madras, Madras-5.

Eligibility for admission to the following Certifiate Courses

1. Certificate Course in Arabic, Persian and Urdu.
2. Certificate Course in Jainology.
3. Certificate Course in French
4. Certificate Course in Telugu.
5. Certificate Course in Vaishnavism

A graduate from this University or from any other University recognised as such thereto

6 Certificate Course in Linguistics

Admission to the above course shall be open only to those who teach at the College or University level or those who have obtained research degrees such as M Phil., and Ph.D , or those who are working M Phil. or Ph.D.

Eligibility for admission to the following Diploma Courses

1. Diploma Course in Arabic, Persian and Urdu.
2. Diploma Course in Folklore.
3. Diploma Course in Comparative Literature
4. Diploma Course in Interlingual Indian Literature
5. Diploma Course in French.
6. Diploma Course in Telugu.
7. Diploma Course in Linguistics.

Admission to the above course is open only to those who have passed the Certificate Course.

8. Diploma Course in Polymer Science.

A graduate from this University or from any other University recognised as such thereto, with Chemistry as the Main Subject with five years experience subject to the condition with permanent employment in an Industry.

Self Addressed 1.40 paise stamped envelope should be accompanied with the requisition for the candidates requesting application forms through post.

Last date for the issue and receipt of applications is **30th July 1987.**

The University reserves the right not to conduct any of the above Courses if the circumstances so Warrant.

APPOINTMENTS

INDIAN INSTITUTE OF TECHNOLOGY

KHARAGPUR

Advertisement No. R/1/87

Applications are invited for the undermentioned posts in the Indian Institute of Technology, Kharagpur West Bengal :

A. Computer Centre

The Indian Institute of Technology has procured a mainframe Cyber system with the latest state-of-the-art technology A distributed computing environment interconnecting all the departments and centres has been planned around this central system. The managers and professionals recruited in following posts will have the overall responsibility of running such a computing environment while developing application packages of national interest Institute is looking for persons who are keen to work in an academic environment while deriving complete professional satisfaction

I. **System Manager** : 1 post.

Scale of Pay : Rs. 1500-60-1800-100-2000-125/2-2500,-

plus D A. etc as admissible. (The scale of pay is likely to be revised).

Age : Preferably between 30 and 45 years.

Qualifications & Experience

B.E./M.Sc. in any branch with 10 years or M.Tech in any branch with 8 years experience in writing programmes relating to operating systems/systems software, out of which at least 3 years must be in the managerial capacity in a large size computer installation.

Job Specification

Overall responsibility of the management of the Centre.

II. **Operation Manager** : 1 post.

Scale of Pay : Rs. 1200-50-1300-60-1900

plus D.A. etc. as admissible. (The scale of pay is likely to be revised).

Age : Preferably between 28 and 40 years.

Qualifications & Experience

B.E./M.Sc. with specialisation and 5 years experience or M Tech. with computer specialisation and 3 years experience. The experience must be in one of the following areas : Development software project, guiding software project team, management of a computer installation.

Job Specification

(1) Day to day management of the Computer Centre
(2) Providing adequate computing service to user community

III. **System Analyst** . 2 posts (one post reserved for Scheduled Caste candidate and one post reserved for Scheduled Tribe candidate)

Scale of Pay : Rs 1200-50-1300-60-1900/- plus D A etc as admissible. (The scale of pay is likely to be revised).

Age : Preferably between 28 and 40 years

Qualifications & Experience

B E /M Sc with computer specialisation and 5 years experience of M.Tech. with computer specialisation and 3 years experience The experience must be in programming relating to system software, application software and software projects

Job Specification

(a) Maintenance & updating of systems sorftware.
(b) Helping users in debugging developing programme packages and usage of available packages.
(c) Development of application packages, and
(d) Organising training course and preparation of user's manual.

IV. **Programmer** : 2 posts (One post is reserved for Scheduled Tribe candidate).

Scale of Pay : Rs. 700-40-1100-50-1600/- plus D A etc. as admissible. (The scale of pay is likely to be revised).

Age : Preferably between 25 and 35 years.

Qualifications & Experience

B.E./M.Sc. with Computer specialisation and 2 years experience or M.Tech with computer specialisation and one year experience. The experience must be in programming relating to system software, application software and software projects.

Job Specification

Same as mentioned for System Analyst post.

B. **Medical Officer** (B.C. Roy Technology Hospital)

Scale of Pay : Rs 700-40-1100-50-1600/- plus D A. etc. and non-practising allowance as admissible. (The scale of pay is likely to be revised)

Age : 35 years and below.

Qualifications & Experience

Essential

(1) A recognised medical qualification included in the First or Second Schedule or Part-II of the Third Schedule (other than Licentiate qualifications) to the Indian Medical Council Act, 1956 Holders of educational qualifications included in Part-II of the Third Schedule should also fulfil the conditions stipulated in Sub-Section 3 of Section 13 of the Indian Medical Council Act, 1956.
(2) 5 years' experience in General Surgery / Orthopaedic Surgery after registration as a medical graduate. Experienc relaxable at the discretion of the appointing authority.

Desirable : M S (General Surgery) or M S (Orthopaedic).

Nature of Duties : In addition to his specialized work, he will be required to perform the duty Medical Officer

The qualifications reg. experience are relaxable at the discretion of the competent authority in the case of candidates belonging to the Scheduled Castes or Scheduled Tribes, if at any stage of selection, the competent authority is of the opinion that sufficient number of candidates from these communities possessing the requisite experience is not likely to be available to fill up the vacancies reserved for them.

The qualifications and experience prescribed above are the minimum and mere possession of the same does not entitle any candidate to be called for interview. Where the number of applications received in response to the advertisement is large, it will not be convenient nor possible for the Institute to interview all those candidates. in that case the Institute may restrict the number of candidates for interview etc to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in the advertisement.

Application forms may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 cm x 10 cm Application accompanied with an application fee (non-refundable) of Rs. 7 50 (candidates belonging to Scheduled Castes/Scheduled Tribes are exempted from paying application fee) payable by means of Crossed Indian Postal Order in favour of Indian Institute of Technology, Kharagpur by the **14th August, 1987.**

Applicants who are on the employment of Government Semi-Government Organisation Educational Institute or of any Government undertaking must send their applications through proper channel.

S.R. Acharyya
REGISTRAR

MANIPUR UNIVERSITY

CANCHIPUR, IMPHAL-795 003
CORRIGENDUM

Dated, the 8th July, 1987

No. Mu 4-16 81 FCY : please read the specialization for the post of ASSISTANT PROFESSOR IN ECONOMICS appearing at Sl No. 21 of this office Advertisement No. 4 87 (No. MU 4-16/81 FCY) dt. 30.6 87 as "Open" in place of 'Agricultural Economics".

Th. Joychandra Singh
REGISTRAR

BANARAS HINDU UNIVERSITY

CORRIGENDUM

to Advertisement No. 11/1986-87
Item No. 21

The number of vacancies for the post of Project Officer, Centre of Adult & Continuing Education may be read as **TWO** instead of one.

CORRIGENDUM

to Advertisement No. 2/1987-88

(i) The scale of pay of the post of Radiological Physicist, Dept. of Radiotherapy & Radiation Medicine at Item No 29 may be read as Rs 700-1600 instead of Rs 700-1300

(ii) The number of vacancies for the post of Reader in Political Science at item No. 82 may be read as TWO instead of one.

(iii) The number of vacancies for the post of Reader in Psychology at item No. 85 may be read as TWO instead of one.

(iv) The number of vacancies for the post of Lecturer in Zoology at item No. 102 may be read as TWO instead of one.

(v) Those who have applied timely for the post of Professor of Sahitya/Darshan at item No. 87 in response to our earlier Advertisement No. 9/1984-85 need not apply again.

GUJARAT AGRICULTURAL UNIVERSITY

SARDAR KRUSHINAGAR 385 506

DIST : BANASKANTHA

Advertisement No. 5 87, Dated : 30.6.87

Applications on prescribed form are invited for the following posts for the faculty of Home Science in Gujarat Agricultural University The candidates who fulfil the qualifications and desire to apply may send their application forms alongwith six copies of authenticated bio-data through proper channel to the Assistant Registrar (Adm), Gujarat Agricultural University, Sardar Krushinagar-385 506, Dist. Banaskantha

Name of the Post and Pay Scale	*Discipline*	*No. of Posts vacant*
1. **Principal** Rs 1500-60-1800-100-2000-125/2-2500 plus other allowances as per University rules with rent free accommodation		1
2. **Professor** Rs. 1500-60-1800-100-2000-125/2-2500 plus other allowances as per University rules	Home Science	1
3. **Associate Professor** Rs 1200-50-1300-60-1600-assessment-60-1900 plus other allowances as per University rules	Nutrition	1
4. **Assistant Professor** Rs 700-40-1100-50-1300-assessment-50-1600 plus other allowances as per University rules.	Nutrition	1
	Home Science Extn. Education	1
	Food Microbiology	1
	Human Anatomy/ Physiology	1
	Home Science	1
	Clothing & Textile	1
	Home Management	1
	Home Science Child Development	1
	Food catering	1
	Horticulture/ Vety Sc. & Animal Husbandary	1

Application forms alongwith details regarding qualifications, experience and other terms and conditions for above posts can be had from the Assistant Registrar (Adm), Gujarat Agricultural University, Sardar Krushinagar-385506, Dist. Banaskantha on cash payment of Rs. 2/- (Money Order will not be accepted) or by sending crossed Indian Postal Order of equal amount issued in favour of "Comptroller, Gujarat Agricultural University, Sardar Krushinagar", along with the self addressed envelope (23×11 cms.) affixed with Rs. 2.20 paise postage stamps.

The applications duly completed in all respects should reach to the Assistant Registrar (Adm) at above address on or before 25.8.87 invariably through proper channel alongwith IPO of Rs. 50/- in favour of Comptroller, Gujarat Agricultural University, Sardar Krushinagar Dist. Banaskantha, Gujarat.

The candidates already in the service of this University may also apply through their respective officers in the prescribed form with six copies of authenticated bio-data without I P O. All candidates called for the interview will have to attend the same at their own cost. Kindly note the following instructions :

1. Incomplete applications will not be considered
2. The University reserves its full right to fill up or not to fill up any or all the posts and to give or not to give appointment to the candidates selected by the Selection Committee.
3. Canvassing in any forms will completely disqualify a candidate
4. Selected candidates for above posts or category is transferable at any campus or centre of the University and between Education, Research and Extension Activities/Project and will have to resign from previous employment.
5. The candidates who fulfil above qualifications and experience and who have applied in response to the advertisement No. 4/85 dated 5-7-1985 will have to apply again without necessary fees.

Asstt. Registrar (Adm.)

BANARAS HINDU UNIVERSITY

CORRIGENDUM OF ADVERTISEMENTS

The Pay Scales of the posts of Professors/Readers/Lecturers and Principals of Colleges advertised previously vide Advt. No. 2/1985-86, 3/1985-86, 5/1985-86, 7/1985-86, 8/1985-86, 10/1985-86, 1/1986-87, 6/1986-87, 7 1986-87, 10/1986-87, 11/1986-87 and 2/1987-88 etc. have since been revised as follows :

Name of the Post	Pre-revised Pay Scale in which the Post was advertised	Revised Pay Scales
1 Professor	Rs. 1500-60-1800-100-2000-125 2-2500	Rs. 4500-150-5700-200-7300.
2 Reader	Rs 1200-50-1300-60-1900	Rs 3700-125-4700-160-5300.
3 Lecturer	Rs. 700-40-1100-50-1600	Rs. 2200-75-2800-100-4000.
4. Principals of Colleges	Rs. 1500-60-1800-100-2000-125 2-2500.	Rs. 4500-150-5700-200-7300.

Accordingly appointments to the Posts of Professors/Readers Lecturers Principals of Colleges as advertised previously will now be made in the revised pay scales.

ENGINEERING COLLEGE KOTA

(Autonomous Institution of Govt. of Rajasthan)

Advertisement No. ECK/Estt/4/87

Applications on the prescribed form are invited for the following posts :

1. **Professors :** in the U G.C. scale of pay of Rs. 1500-60-1800-100-2300-125/2-2500. (i) Civil Engineering-2 posts, (ii) Electrical Engineering/Electronics-1 post (iii) Computer Engineering-1 post, (iv) Mechanical Engineering-1 post. (v) Mathematics-1 post

Qualifications : An eminent scholar with published work of high quality, actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge.

2. **Readers :** in the U.G.C. scale of pay of Rs. 1200-50-1300-60-1900. (i) Civil Engineering-5 posts. (ii) Electrical Engineering/Electronics-2 posts (iii) Mechanical Engineering-3 posts; and (iv) Mathematics-1 post.

Qualifications (for Technical) : Good academic record with a Doctor's degree in the relevant field about 5 years experience of teaching and/or research and development. Provided further that candidates not possessing Ph.D. may be considered if they have to their credit equivalent published research work or design/development work of a high order either in the institution or in an industry.

OR

In the case of persons to be recruited from industry on professional fields, candidates should possess good academic record with recognised professional work of about 7 years which should include innovation and/or research and development.

Qualification (For Non Technical) : Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods, or (iii) production of technical materials. About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. The condition may be relaxed in the case of candidates with outstanding research work.

3. **Lecturers :** in the U.G.C. scale of pay of Rs. 700-40-1100-50-1600. (i) Civil Engineering-3 posts, (ii) Geology-1 post, (iii) Electrical Engineering-2 posts, (iv) Mechanical Engineering-3 posts, (v) Computer Engineering-1 post, (vi) Physics-1 post, (vii) Humanities-1 post.

Qualifications (for Technical) : Master's degree in appropriate field in Engineering/Technology ; consistently good academic record with a bachelor's degree in Engineering/Technology; First class at Bachelor's degree and/or Master's degree level. One year's relevant professional experience outside academic/research institutions.

Provided further that if a candidate does not possess professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of five years of his appointment, failing which he will not be able to earn further increments, until he fulfils this requirement. Having regard to the requirements of emerging fields of Engineering of developing inter-disciplinary programmes, the requirements of Engineering Technology degree may be waived in the cases of otherwise well qualified candidates.

Qualifications (for Non-Technical) :

(a) A Doctor's degree or research work of an equally high standard.

(b) Consistently good academic record Ist or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

Provided that if the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research workof quality) may be appointed provided he has done research work for at least two years or has practical experience in a research/laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equiva-

lent high standard within five years of his appointment failing which he will not be able to earn further increment until he fulfils these requirements.

General : The benefits of CPF, Gratuity, D.A. H.R.A., Medical reimbursement are admissible as per rules of the college, Candidates aged 55 years or above but below 60 could be considered for appointment, if found suitable either on contract basis or on temporary basis. Higher starting pay is admissible in deserving cases. Number of posts to be filled may be changed at the discretion of the college. The college reserves the right not to fill any of the post advertised Candidates interested to come on deputation may also apply. Candidates already in service may apply through proper channel.

Suitable candidates belonging to SC ST would be considered and preferred for the post of Lecturers. Candidates belonging to SC ST should submit a certificate regarding their caste.

Form : The application form can be obtained from Engineering College, Kota on remission of Rs. 2 - by cash or I.P O.

Fees : The application must be accompanied by an application fee of Rs. 15 - in the form of crossed Indian Postal Order payable to the Engineering College, Kota at Kota Post Office Application not accompanied by postal order of the value of application fee will not be considered.

Last Date : Last date for receipt of application is **31-8-1987.** Applications received after the due date will not be considered.

R.K. Jain
REGISTRAR

PUNJABI UNIVERSITY PATIALA

Advt. No. 22/Rect./PRO/Rect.

Applications are invited for the following posts :

1. **Professors :** (Two in the Department of Economics, One each in the Department of Sociology & Social Anthropology and Regional Centre, Bhatinda in the Subject of Economic.)

Grade : Rs. 1500-60-1800-100-2000-125/2-2500 (UGC)

Specializations

Economics : Any one or more of the following :

Regional Economics, Political Economy of Development, Public Finance, International Economics.

Sociology & Social Anthropology

Desirable · Evidence of work in Punjabi and Research work on Punjabi Society.

Economics for Regional Centre, Bhatinda: Open

2. **Readers :** (Three in the Department of Geography, Two each in the Department of Economics and Guru Gobind Singh Department of Religious Studies. One each in the Departments of Sociology & Social Anthropology. Anthropological Linguistics. Education & Community Services, Foreign Languages (for French).

Grade · Rs. 1200-50-1300-60-1900 (UGC)

Specializations

Geography For One post · Political Geography
Two posts Open

Sociology & Social Anth.

Desirable · Evidence of work in Punjabi and Research work on Punjabi Society.

Anth. Linguistics General Linguistics OR Stylistics OR Socio-Linguistics OR Phonology OR Punjabi Grammer OR Semiotics OR Transformational Generative Grammer.

Economics Any one or more of the following ·

Industrial Economics, Monetary Economics, Transport Economics, Economic Thought

G.G.S. Deptt of Religious Studies

For First Post Religious Studies/ Comparative Religion. Proficiency in one or more major religious traditions of the world.

For Second Post . Christian Studies. Proficiency in Christian Theology and a religious tradition other than Christianity.

3. **Lecturers** (One each in the Departments of Persian, Urdu & Arabic (for Arabic), Anth. Linguistics, Foreign Languages (for Russian), Education & Community Services, Physics and Economics)

Grade : Rs. 700-40-1100-50-1600 (UGC)
Specializations

Arabic · Candidate should be M A. (Arabic) First Class/High Second Class (B+) with M.Phil/M Lit/Ph D Degree OR should have published work of high standard. He must have atleast three years teaching experience to Arabic Classes. Preference will be given to the candidates having qualifications in Persian

Anth. Linguistics · General Linguistics or Stylistics or Sociolinguistics or Phonology or Punjabi Grammer or Semiotics or Transformational Generative Grammer.

Physics . Experimental Physics.

Economics . Any one or more of the following :

Microeconomic Theory, Macroeconomic Theory, Economic History, Monetary Economics.

4. **Assistant Registrar** One

Grade Rs. 940-30-1000-40 1200/50-1400/60-1700-75-1850+100 Spl. Pay

Note

(i) For teaching & research posts candidates should possess working knowledge of Punjabi Parveshika/Matric standard.
(ii) Details of QUALIFICATIONS etc. will be supplied alongwith application forms
(iii) Number of posts may be increased or decreased
(iv) The qualifications may be relaxed in case of poor response.
(v) The University reserves the right not to fill up of the posts advertised.

APPLICATION FORMS can be had from the Head, Publication Bureau, Punjabi University, Patiala on payment of Rs. 5/-, at the Counter OR by sending IPO's of Rs 5/- in favour of the Registrar, alongwith self addressed envelope of the size 25 x 10 cms. with 340 paise postage superscribing on it REQUEST FOR APPLICATION FORM FOR THE POST OF— — — — —.

In service candidates should apply through proper channel with an advance copy to the University.

Application form, complete in all respects, should reach the Registrar by **31-7-1987**

REGISTRAR

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